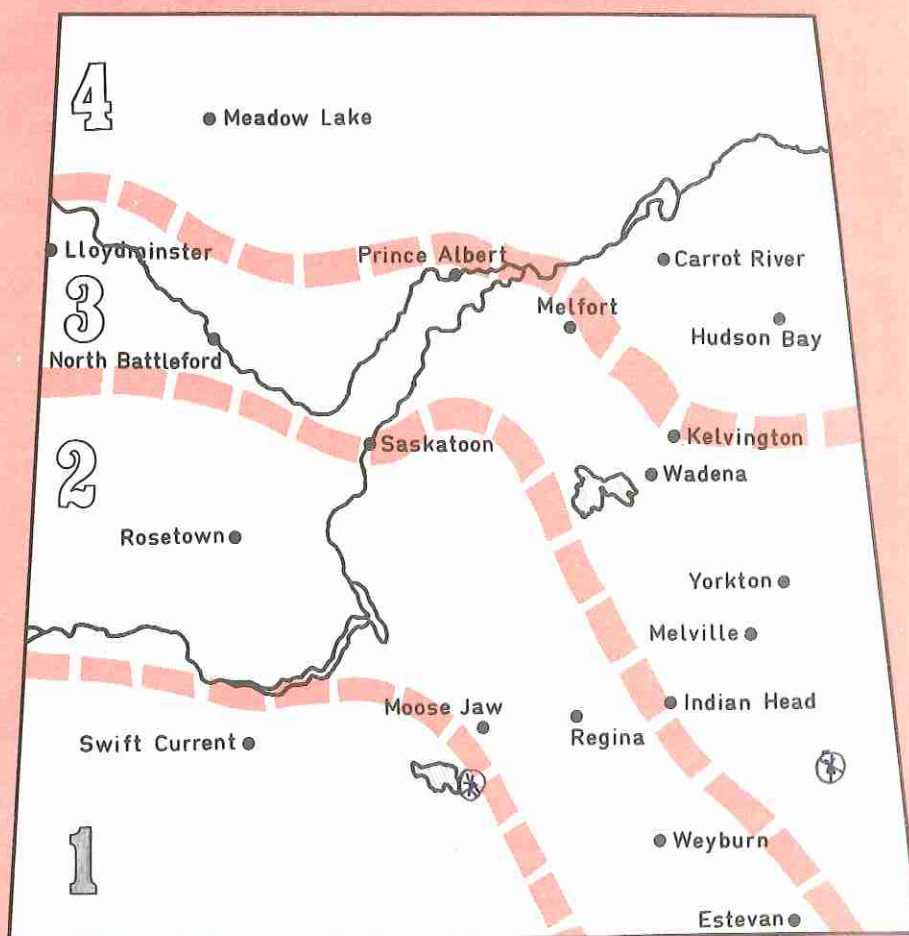




Varieties of Grain Crops for Saskatchewan 1976



Descriptions as prepared by:
THE SASKATCHEWAN ADVISORY COUNCIL
ON GRAIN CROPS

Published under
The Saskatchewan Co-operative Agricultural Extension Program

By authority of
The Honourable Edgar Kaeding, Minister of Agriculture

GRAIN CROP PRODUCTION AREAS

(See map on front page)

The cropland of Saskatchewan has been divided into four areas based roughly on climate, vegetation and soil type. The relative yields of crop varieties tend to vary from area to area. In choosing a variety a farmer will want to consider the yields in his area and special requirements such as early maturity, disease resistance or sawfly resistance.

- Area 1: Drought is a definite hazard and high winds are common. Sawfly outbreaks often occur in this area. Cereal rust may occur in the extreme southeastern section.
- Area 2: Drought and sawflies can be problems in the western and central sections of the area. Cereal rust may be a problem in the southeastern section.
- Area 3: Drought is not as likely to be a problem in this area, particularly in the east. Cereal rust may occur in the eastern portion. The frost-free period can be fairly short in the northwestern and northeastern sections.
- Area 4: Rainfall is usually adequate for crop production. However, early fall frosts and wet harvest weather are frequent problems.

The dividing lines do not represent distinct changes over a short distance. The change from one area to another is gradual.

The following tables contain the main characteristics of new and commonly grown varieties of cereals, oilseed crops and minor crops. Varieties that are not listed are considered to be inferior for production in Saskatchewan, except under certain localized conditions. The comments in the tables are based on averages for several stations in each area for at least three years.

BARLEY Main Characteristics of Varieties

Type and Variety	Six or Two Rowed	Yield as % of Conquest				Average Maturity in Days	Resistance to				
		Area 1	Area 2	Area 3	Area 4		Lodging	Stem Rust	Loose Smut	False Loose and Covered Smut	Shattering
Eligible for C.W. Grades											
Conquest	Six	100	100	100	100	88	Good	Good	Fair*	Fair	Fair
Bonanza	Six	106	111	112	111	89	Good	Good	Fair*	Fair	Fair
Betzes	Two	110	109	104	98	90	Poor	Poor	Poor	Poor	Good
Hector	Two	117	116	108	100	92	Fair	Fair	Fair	Fair	Good
Feed											
Galt	Six	115	113	115	108	90	Good	Good	Poor	Good	Good
Fergus	Two	106	113	107	104	92	Fair	Poor	Fair	Fair	Good
Windsor	Six	107	105	102	111	91	Good	Good	Poor	Fair	Fair

*Races of loose smut that can attack previously resistant varieties have been found in the eastern part of the province.

COMMENTS:

Loss appraisal studies in Saskatchewan (1973-1975) indicate an estimated average yield reduction of 13% due to common root rot. HECTOR and BONANZA appear to have superior field tolerance to the disease.

GALT is a six-rowed, semi-smooth awned, short-strawed, variety of feed barley.

FERGUS is a two-rowed, rough-awned feed barley.

WINDSOR is a new six-rowed feed barley and the

only variety with good scald resistance. It is best suited to area 4.

BEACON is a white aleurone, six-rowed barley which is being grown under contract. It is 2-3 days earlier than BONANZA and is 15% lower yielding.

HECTOR is a two-rowed, rough-awned variety that does well in areas 1 and 2. Small scale tests by industry for malting and brewing quality have thus far proved satisfactory. It offers more resistance to lodging and shattering than BETZES.

WHEAT

Main Characteristics of Varieties

Variety	Area 1	Area 2	Area 3	Area 4	Average Maturity in Days	Resistance to					
						Lodging	Shattering	Stem Rust	Leaf Rust	Loose Smut	Root Rot
<u>Yield as % of Neepawa</u>											
Bread Wheat											
Neepawa	100	100	100	100	98	Good	Good	Good	Poor	Good	Fair
Canuck	99	97	—	—	101	Fair	Good	Fair	Poor	Good	Fair
Cypress	92	86	—	—	100	Fair	Fair	Poor	Poor	Poor	Poor
Manitou	95	98	97	98	98	Good	Good	Good	Poor	Good	Fair
Napayo	94	95	98	101	99	Good	Good	Good	Poor	Good	Fair
Sinton	91	101	99	107	99	Good	Fair	Good	Good	Fair	Fair
Utility Wheat											
Glenlea	102	108	113	127	101	Good	Good	Good	Good	Good	Fair
Norquay	103	109	112	104	100	Good	Good	Good	Good	Poor	Fair
Pitic 62	115	113	118	111	104	Good	Good	Poor	Fair	Poor	Fair

<u>Yield as % of Wascana</u>											
Durum Wheat											
Wascana	100	100	100	100	101	Good	Good	Good	Good	Good	Poor ✓
Hercules	85	88	92	101	98	Good	Good	Good	Good	Good	Poor ✓
Macoun	95	88	94	92	100	Good	Good	Good	Good	Good	Poor ✓
Pelissier	96	—	—	—	106	Fair	Good	Poor	Good	Good	Poor
Stewart 63	89	91	94	84	104	Fair	Good	Good	Good	Fair	Poor ✓
Wakooma	98	100	101	98	102	Good	Good	Good	Good	Good	Fair ✓

	<u>Yield as % of Winalta</u>			Plant Height	<u>Resistance to</u>	
	Area 3	Area 4			Winter Killing	Lodging
Winter Wheat						
Winalta	100	100		Medium	Poor	Fair
Kharkov	101	113		Tall	Fair	Poor
Sundance	118	122		Tall	Fair	Poor

COMMENTS

SINTON is a new bread wheat variety that is resistant to leaf rust. It is similar to NEEPAWA in height and maturity but is freer-threshing and some shattering could occur if swathing is delayed. SINTON seems adapted to all areas except the drier Area 1. Seed will be distributed to seed growers this year but commercial seed supplies of SINTON will not be available until 1977.

Both NAPAYO and SINTON are awned varieties. The awns tend to give a more open swath. These varieties should be useful where problems have arisen from slow drying of the swath or in picking up the swath from light stands.

CANUCK is the highest yielding of the sawfly re-

sistant varieties. It is slightly taller than CYPRESS but more resistant to lodging.

GLENLEA, PITIC 62 and NORQUAY are eligible for utility grades only. Early seeding of these varieties is desirable to obtain highest yields. Low bushel weight may result from harvesting PITIC 62 too early. Both PITIC 62 and NORQUAY are awned.

GLENLEA, a large-seeded variety, is taller than NEEPAWA. It is better suited to areas 3 and 4 where the likelihood of drought is less.

NORQUAY is a white-seeded semi-dwarf variety. Problems have been experienced in distinguishing seed of NORQUAY from bleached seed of the bread

wheats. This variety may be withdrawn from commercial production within the next few years.

WASCANA, WAKOOMA, MACOUN and HERCULES all possess improved quality for spaghetti and macaroni production and are more desirable for the export market than the older varieties STEWART 63, RAMSEY and PELISSIER. These older varieties are also lower yielding and should not be grown.

WASCANA and WAKOOMA yield well in all areas. The early maturing variety HERCULES is best suited to the northern durum wheat areas.

Winter survival is the chief factor limiting winter wheat production in Saskatchewan. However, seeding winter hardy varieties between August 15 and September 7 with adequate fall moisture and the presence of early and persistent snow cover have resulted in successful commercial production in areas 3 and 4 and the southern portion of area 1. If a reasonable stand survives the winter, winter wheat should yield about 15% higher than red spring wheat. It also has the additional advantages of early maturity, redistribution of labor requirements and increased competition with weeds.

OATS

Main Characteristics of Varieties

Variety	Yield as % of Harmon				Average Maturity in Days	Resistance to				Percent Hull
	Area 1	Area 2	Area 3	Area 4		Lodging	Stem Rust	Leaf Rust	Smut	
Harmon	100	100	100	100	92	Fair	Poor	Fair	Fair	24.1
Cavelle	102	107	106	101	89	Poor	Poor	Poor	Poor	24.1
Fraser	105	107	108	106	94	Good	Poor	Poor	Fair	24.7
Garry	100	101	100	95	92	Fair	Poor	Fair	Fair	23.8
Hinoat	68	79	78	76	87	Fair	Poor	Poor	Fair	24.7
Hudson	104	105	111	109	93	Good	Good	Good	Fair	24.7
Kelsey	98	106	105	105	90	Fair	Poor	Fair	Fair	22.6
Random	110	107	110	108	91	Good	Poor	Fair	Poor	24.1
Sioux	105	105	106	104	90	Fair	Poor	Poor	Fair	23.1

COMMENTS:

HARMON is a plump-seeded variety with moderately strong straw.

RANDOM is a widely adapted, high yielding variety that is responsive to fertilizer and early seeding. It has short, strong straw but it is lighter in bushel weight than HARMON.

SIOUX and KELSEY are early varieties and are recommended if seeding is delayed. SIOUX is better adapted than KELSEY to area 1.

CAVELLE, licensed in 1974, is about one day ear-

lier than KELSEY and SIOUX but has weak straw. Seed supply of CAVELLE will be limited in 1976.

HUDSON, licensed in 1974, has short strong straw and is the only commercial variety with resistance to race C10 of stem rust. It has yielded well in areas 3 and 4 but is low in bushel weight.

HINOAT, licensed in 1973, is a special purpose high protein oat for milling. It is the shortest and earliest maturing oat but is low in yield and very susceptible to leaf rust.

OTHER INFORMATION RELATING TO GRAIN CROP PRODUCTION

Bulletins on fertilizers and weed control, generally revised annually, are available from sources given. Information on crops, plant diseases, insect pests and other aspects of production can be found in the Guide

to Farm Practice in Saskatchewan and other pamphlets. These publications may be obtained from Agricultural Representatives, Research Stations and the University of Saskatchewan.

FLAX

Main Characteristics of Varieties

Variety	Yield as % of Redwood 65				Average Maturity in Days	Resistance to		Seed Size	Flower Color
	Area 1	Area 2	Area 3	Area 4		Rust	Wilt		
Redwood 65	100	100	100	100	105	Poor	Good	Medium	Blue
Dufferin	82	94	99	105	103	Good	Good	Medium	Blue
Linott	90	92	91	99	101	Good	Good	Medium	Blue
Noralta	95	96	95	96	99	Poor	Good	Small	Blue
Norland	103	96	96	84	105	Poor	Fair	Large	White
Raja	62	74	79	77	92	Good	Good	Large	Blue

COMMENTS:

NORALTA, NORLAND and REDWOOD 65 are susceptible to several new races of rust which first appeared in 1973. These varieties will be removed from the recommended list when sufficient supplies of DUFFERIN are available. DUFFERIN, LINOTT and RAJA are the only resistant varieties presently available. DUFFERIN should be considered a replacement for REDWOOD 65.

Rust and other flax diseases overwinter in Saskatchewan. To minimize these diseases, avoid planting flax on or near flax stubble. Use clean seed as the refuse or debris in the seed may be infected with the disease.

Frozen flax should be analysed by the Saskatchewan Feed Testing Laboratory to determine that it is free from Prussic acid before using it for livestock feed.

RYE

Main Characteristics of Varieties

Type and Variety	Yield as % of Puma				Winter Killing	Resistance to		Kernel		Straw Length
	Area 1	Area 2	Area 3	Area 4		Shattering	Lodging	Color	Size	
Fall Rye										
Puma	100	100	100	100	Good	Good	Fair	Green	Medium	Tall
Cougar	101	98	92	93	Fair	Good	Good	Green	Medium	Medium
Frontier	88	88	94	99	Good	Fair	Poor	Green	Medium	Tall
Kodiak	86	87	92	106	Fair	Fair	Fair	Tan	Large	Tall
Spring Rye										
Prolific	—	—	—	—	—	Fair	Fair	Green	Medium	Tall
Gazelle	—	—	—	—	—	Fair	Fair	Green	Medium	Tall

COMMENTS:

ANTELOPE, a popular fall rye variety for many years, has been replaced by newer varieties possessing better kernel type and higher yielding ability.

Yield data are likely to fluctuate widely due to winter killing.

GAZELLE spring rye averages about 27% higher yielding than PROLIFIC.

RAPESEED
Main Characteristics of Varieties

Variety	Area 3			Area 4		
	Yield as % of Span	Average Maturity in Days	% Oil	Yield as % of Span	Average Maturity in Days	% Oil
B. campestris (Turnip rape)						
Span	100	87	38.7	100	90	39.2
Torch	100	87	39.2	105	90	39.9
R-500	93	95	42.4	80	98	43.0
B. napus (Argentine type)						
Midas	132	98	43.5	141	103	43.7
Tower	115	98	42.8	125	103	42.4

COMMENTS:

In order to meet the demands of the edible oil market for less than 5% erucic acid, only low erucic varieties are recommended for general production in 1976. Use of certified seed is essential to ensure that quality characteristics of the improved rapeseed varieties are maintained and marketing problems avoided.

The low erucic **B. napus** varieties MIDAS and TOWER both have the early maturity and shorter plant height of the normal erucic variety TARGET. TOW-

ER, which produces superior quality meal with low glucosinolate level and excellent protein content, will be more readily marketable than MIDAS and will be preferred by rapeseed crushing firms in 1976.

R-500, licensed in 1975, produces oil with a very high erucic acid level. It has large, yellow seed and matures about one week later than TORCH.

High erucic acid rapeseed varieties should only be grown under contract for specialized industrial oil markets.

MINOR CROPS

FIELD PEAS

Main Characteristics of Varieties

Variety	Yield as % of Century	Average Maturity in Days	Seed Size	Cotyledon Color	Vine Length	Seeding Rate	
						(lb./ac.)	(kg./ha.)
Century	100	100	Large	Yellow	Tall	170	190
Trapper	100	98	Small	Yellow	Medium	110	125
Triumph	107	103	V. Large	Green	Medium	220	245

COMMENTS:

Field peas are best adapted to the parkland area of the province. Growers should investigate potential markets such as home-grown protein, industrial use or pea soup before seeding. Protein content varies consid-

erably among fields of the same variety and, thus, it is advisable to obtain a protein analysis on peas used in livestock rations. Field pea seed should be inoculated before planting. See SEED INOCULATION section.

FABABEAN (Horse Beans)
Main Characteristics of Varieties

Variety	Yield as % of Ackerperle	Average Maturity in Days	Seed Size	Plant Height	Seeding Rate	
					(1 lb./Ac.)	(kg./ha.)
Ackerperle	100	105	Small	Tall	135	151
Erfordia	113	107	Large	Tall	170	191
Diana	108	102	Medium	M. Tall	155	175

COMMENTS:

Fababeans are a promising source of protein for livestock feeding. They should be seeded early and are best adapted to that portion of the Black soil zone with the longest growing season. Seed 3 inches (7 cm) deep in rows 6 to 7 inches (15 to 17 cm) apart. Fababean seeds are very large and a seeder with a deep-fluted cup must be used to prevent seed cracking. In order to reduce shattering losses, swathing can be done as soon as the lower most pod turns dark on 25% of the plants. Fababean seed should be inoculated before planting. See SEED INOCULATION section.

LENTILS

Lentils are an annual legume crop grown for human food. They have about the same growing season requirements as wheat. The main production problems are weed control and short growth which makes harvesting difficult. To assure a market, it is advisable to grow lentils under contract.

Lentil seed should be inoculated before planting. See SEED INOCULATION section.

TAME BUCKWHEAT

Tame buckwheat is usually produced under contract. This crop will grow under a wide range of soil conditions but performance is highly dependent on weather. Buckwheat is very susceptible to frost; therefore, early June seeding is recommended. Also, it is very sensitive to high temperatures and dry weather, especially at blossom time. It does not recover from lodging as do most other crops. Yields in Saskatchewan have been extremely variable. There are no selective herbicides for weed control in buckwheat.

MANCAN is a new variety with about a 25% larger seed than TEMPEST or TOKYO. MANCAN and TEMPEST are about 10% higher yielding than TOKYO.

TAME MUSTARDS

The mustards are intermediate between rapeseed and wheat in drought tolerance. Mustards are less susceptible to shattering than rapeseed and can be straight combined.

The three types of mustard grown commercially are YELLOW, ORIENTAL and BROWN. Yellow mustard in comparison to turnip rape is slightly lower in seed yield, a few days later in maturity and similar in plant height. Brown mustard matures a few days later than Yellow mustard but earlier than Argentine type rapeseed. Seed yields of Brown and Oriental mustard are usually 10 to 15% higher than Argentine type rape and 25 to 30% higher than Yellow mustard. The yield

differences between the mustard species are usually compensated by a contract price differential.

In the last few years, there has been a trend by contracting companies to replace the unnamed strains of Canadian origin with the following named varieties:

GISILBA — a variety of Yellow mustard from Germany that is equal in yield and other characteristics to common Canadian Yellow mustard strains.

LETHBRIDGE 22A — an Oriental mustard with superior seed color under a wide range of climatic conditions.

STOKE — an Oriental mustard with high yield of seed and allyl isothiocyanate.

EKLA — a German Brown mustard variety slightly lower yielding than common Canadian strains but higher in allyl isothiocyanate.

Mixtures of mustard and rapeseed due to volunteering or handling on the farm cause substantial losses through a grade reduction. Rapeseed and mustard should not be grown on the same farm and preferably not in the same district.

TRITICALE

Triticale is a new man-made species derived from wheat and rye. ROSNER is the only variety licensed in Canada thus far. It is lower yielding than other cereals on the Prairies but improved varieties are expected which will make Triticale more competitive.

SUNFLOWERS

Sunflowers have been grown successfully in central and southern Saskatchewan. Because of the need for early maturity, ~~only the~~ variety KRASNODARETS is recommended. The crop is more drought-tolerant than other oilseed crops and is adapted to a range of soil types. In general, the lighter soils which warm up early in the spring are preferred. Early planting is recommended since sunflowers have good resistance to frost into the four-leaf stage.

Solid seeding in rows 12 to 18 inches (30 to 45 cm) is the standard practice. The standard grain seeding equipment, preferably the press or double-disc drill, sowing at about seven pounds per acre (eight kg. per hectare) will provide a desirable population of 25,000 plants per acre (62,000 plants per hectare). Sunfallow provides some crop return in a summerfallow year. A single or double row of sunflowers sown 10 or more feet (3.3 meters) apart on cereal stubble allows normal grain tillage machinery to either straddle the row or till between the rows. For best results in the crop following

sunfallow the stalks should be left standing to trap the winter snow.

Herbicides are available for control of most weeds in sunflowers. However, if there is any secret to successful sunflower production, it is the practice of cross-harrowing in the seedling stage. Sunflowers are extremely susceptible to 2,4-D or MCPA drift. Special attachments are required for combine harvesting.

CANARY SEED

This is an annual grass with the same maturity re-

quirement as wheat. The seed is about the size of flax and should not be sown deeply. Hot dry weather at heading time can reduce yields to very low levels. Herbicides can be used for the control of broadleaved weeds.

Seed and detailed information are available from contract buyers of the crop.

CORN

Corn is recommended for silage purposes only since grain corn does not usually mature in Saskatchewan.

SEED FACTS

A good practice is to use certified seed regularly, and especially when changing to a different variety. This assures that the seed has high genetic purity, high germination, and is relatively free from weeds and other crop seeds. Pedigreed seed may be paid for by an over-quota delivery of commercial grain. Ask your elevator agent or seed dealer for details.

SEED CLEANING

Home grown seed should be carefully cleaned to remove weed seeds, trash and small or broken kernels. The cleaning job should not be rushed, and farmers should not object if a high percentage is cleaned out.

SEED TREATMENT

Chemical seed treatments can be used to control certain diseases and insects. The smuts that attack wheat, barley, oats and rye can be controlled in this manner. Pedigreed seed, seed of resistant varieties (see variety descriptions), and seed of susceptible varieties that is free of smut should not require treatment. If smut was observed in a crop which is being used for seed it should be treated. When growing cereal varieties which are susceptible to smuts and the presence of smut is uncertain, it may be a wise precaution to treat home-grown seed every two or three years depending on the susceptibility of the variety.

Various fungicides have been registered for the control of seedling diseases. Flax, and rye seed should be treated to promote good seedling growth.

Wireworms, which attack all grain crops, and flea beetles, which attack rape and mustard, can be controlled by seed treatment with insecticides. A seed treatment may contain a fungicide alone, an insecticide alone or a dual-purpose mixture. Read the label carefully and follow all directions.

Treated seed must not be allowed to contaminate grain delivered to an elevator or used for feed. This means cleaning out bins, truck boxes and augers used for handling treated seed.

Unless left-over treated seed is being stored for future use it should be buried. Care should be taken to prevent exposure of treated grain to wildlife.

MAGNETIC SEED TREATMENT

Magnetic treatments of wheat, oats, barley, rape, flax, peas and fababeans were tested extensively in Saskatchewan in 1974 and 1975. In almost every case seed treatments neither increased yield nor affected maturity. The use of magnetizers is not recommended.

ERGOT

Ergot attacks all varieties of rye, wheat (both common and durum) and barley, as well as most common species of grass. Oats are rarely attacked, and all broad-leaved species are immune. Cool, moist weather at flowering time increases risk of ergot infection. To minimize ergot infection use clean seed, cut nearby grasses before flowering, and avoid seeding rye, wheat or barley on land which produced an ergoty crop in the previous year. Grain containing 0.1% ergot is considered poisonous and should not be used as feed.

SEED INOCULATION

The legume crops mentioned above (peas, lentils and fababeans) add nitrogen to the soil only if their roots are well nodulated with nitrogen-fixing bacteria. When growing a particular legume on a field for the first time, inoculate the seed immediately before planting. Packaged inoculant for specific crops is available from seed dealers. Peas and lentils are nodulated by the same bacterial strains. Fababeans require a different strain. Inoculants packaged for use on alfalfa and clovers are not effective on peas, beans and lentils. Be sure the inoculant is not outdated, and follow instructions on the package.

DAMP AND FROZEN SEED

Seed which is stored damp or tough may be low in germination. Grain which is being saved for seed should be dried if necessary, soon after harvest. Drying temperature should be kept below 37°C for batch driers, or 43°C for recirculating and continuous driers. Frozen grain should never be sown without a laboratory germination test. There is frequently a high percentage of abnormal seedlings which may be unnoticed by an inexperienced observer.